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HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 828
BLOOMFIELD HILLS, MI 48303

EXAMINER	
PASIA, REDENTOR M	
ART UNIT	**PAPER NUMBER**
2616	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/779,575	SAWADA ET AL.	
	Examiner	Art Unit	
	Redentor M. Pasia	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 November 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's amendment filed on November 6, 2007 has been entered. Claims 1, 4, 8-11, 13-16, 18-19, 22, 24-25, 28 and 31 have been amended. No claims have been canceled. Claim 34 has been added. Claims 1-34 are still pending in this application, with claims 1, 8, 9, 11, 13-15, 19, 22, 25, 28 and 31 being independent.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Should applicant desire to obtain the benefit of foreign priority under 35 U.S.C. 119(a)-(d) prior to declaration of an interference, a certified English translation of the foreign application must be submitted in reply to this action. 37 CFR 41.154(b) and 41.202(e).

Failure to provide a certified translation may result in no benefit being accorded for the non-English application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Baker et al. (US 2002/0119778 A1; hereinafter Baker).

As to claim 1, Baker shows a radio communication system (Figure 1-2; abstract; radio communication system) comprising: a base station (Figure 1-2, BS 100) and a terminal station (Figure 1-2, MS 110) provided as one and another communication stations, wherein the one communication station is constructed to send each of a plurality of send packets (Figures 3-4, packets 302) to the another communication station in parallel (Par. 0029; the logical channels are time-multiplexed so as to appear effectively as a single data stream at the MS 110; other methods of transmitting in parallel may be used as alternatives (or in combination with time-multiplexing or with each other), including for example frequency-, code- and space-multiplexed) through a plurality of channels (Figures 3-4, channels 1-4) as one packet unit (Figure 3-4; P1P2, P3, P4 are one packet unit), each of the plurality of channels being defined by a different frequency (Par. 0029; the logical channels are time-multiplexed so as to appear effectively as a single data stream at the MS 110; other methods of transmitting in parallel may be used as alternatives (or in combination with time-multiplexing or with each other), including for example frequency-, code- and space-multiplexed).

As to claim 2, Baker shows that the one communication station is constructed to send, after accumulation of n send packets has been completed, each of n send

packets through n channels to the another communication station as one packet unit, the n being a natural number equal to or more than 2 (Figure 3-4; n send packets of Baker are shown to be transmitted from DL_{1-3} along parallel channels 1-4, where P1P2, P3, P4, P5P2... are sent; where $n \geq 1$).

As to claim 3, Baker shows that the one communication station is constructed to send, after a predetermined period of time has elapsed before the accumulation of n send packets (Figure 3-4, packet unit P1P2) is completed, each of m send packets (P5P2, P6, P4), accumulation of which has been completed in the predetermined period, through m channels to the another communication station as one packet unit, the m being a natural number and smaller than n (Figure 3-4, taking into consideration P6 and P4, transmitted on DL_{3-4} along parallel channels 3-4; where m in this situation is equal to 1 which is less than n (equal to two) where n was taken from P1P2.

As to claim 4, Baker shows that the another communication station (Figure 1-2, MS 110) is constructed to send an ACK packet (Figure 3-4, ACK 304) to the one communication station (Figure 1-2, BS 100) as independent data through the plurality of channels (Figure 3-4, parallel channels 1-4) with respect to each of a plurality of send packets received from the one communication station, after the send packet is normally received from the one communication station, the ACK packets indicating that each of the send packet has been normally received (Figure 3-4; Par. 0024-0025; the first data packet P1 is sent via the first logical channel and is received correctly by the MS 110, which transmits an acknowledgement A1 304 on an uplink channel 124.).

As to claim 5, Baker shows that the one communication station is constructed to resend the send packet which has not been normally received by the another communication station, to the another communication station after a predetermined period of time has elapsed before the ACK packet is received from the another communication station (Figure 3-4; Par. 0025; the second data packet P2 is sent via the second logical channel. However, this packet is not received correctly by the MS 110, which issues a negative acknowledgement (N2) 306. Hence, when channel 2 is next scheduled for transmission, packet P2 is transmitted again. This time it is correctly received, and an acknowledgement 304 is issued on the uplink channel 124, thereby freeing channel 2 to transmit further packets 302.).

As to claim 6, Baker shows that the another communication station is constructed to send an ACK packet to the one communication station as independent data, after the send packet has been normally received from the one communication station, the ACK packet indicating that the send packet has been normally received (Figure 3-4, ACK 304; Par. 0025; the first data packet P1 is sent via the first logical channel and is received correctly by the MS 110, which transmits an acknowledgement (A1) 304 on an uplink channel 124.), and wherein the another communication station is constructed to send a NACK packet (Figure 3-4, NACK 306) to the one communication station as independent data after the send packet has not been normally received from the one communication station, the NACK packet indicating that the send packet has not been normally received (Figure 3-4; Par. 0025; the second data packet P2 is sent via the second logical channel. However, this packet is not received correctly by the MS 110,

which issues a negative acknowledgement (N2) 306. Hence, when channel 2 is next scheduled for transmission, packet P2 is transmitted again. This time it is correctly received, and an acknowledgement 304 is issued on the uplink channel 124, thereby freeing channel 2 to transmit further packets 302.).

As to claim 7, Baker shows the one communication station is constructed to resend the send packet, which has not been normally received by the another communication station, to the another communication station, after the NACK packet has been received from the another communication station (Figure 3-4; P2 was resent after N2 was issued by MS110 when initial transmission of P2 was not correctly received.)

As to claim 8, Baker shows a communication station (Figure 1-2; abstract; radio communication system) for operating as a base station (Figure 1-2, BS 100) or a terminal station (Figure 1-2, MS 110), wherein the communication station is constructed to send each of a plurality of send packets (Figures 3-4, packets 302) in parallel (Par. 0029; the logical channels are time-multiplexed so as to appear effectively as a single data stream at the MS 110; other methods of transmitting in parallel may be used as alternatives (or in combination with time-multiplexing or with each other), including for example frequency-, code- and space-multiplexed) through a plurality of channels) to another communication station as one packet unit (Figure 3-4; P1P2, P3, P4 are one packet unit), each of the plurality of channels being defined by a different frequency (Par. 0029; the logical channels are time-multiplexed so as to appear effectively as a single data stream at the MS 110other methods of transmitting in parallel may be used

as alternatives (or in combination with time-multiplexing or with each other), including for example frequency-, code- and space-multiplexed).

As to claim 9, Baker shows a communication station (Figure 1-2; abstract; radio communication system) for operating as a terminal station (Figure 1-2, MS 110), wherein the communication station is constructed to receive a plurality of send packets (Figures 3-4, packets 302) through a plurality of channels (Figures 3-4, channels 1-4) from another communication station (Figure 1-2, BS 100), each of the plurality of channels being defined by a different frequency (Par. 0029; the logical channels are time-multiplexed so as to appear effectively as a single data stream at the MS 110; other methods of transmitting in parallel may be used as alternatives (or in combination with time-multiplexing or with each other), including for example frequency-, code- and space-multiplexed), and wherein the communication station (Figure 1-2, MS 110) is constructed to send an ACK packet (Figure 3-4, ACK 304) to the another communication station (Figure 1-2, BS 100) as independent data through the plurality of channels (Figure 3-4, parallel channels 1-4) with respect to each other the plurality of send packets received from the another communication station, after the send packet has been normally received from the another communication station, the ACK packet indicating that the send packet has been normally received (Figure 3-4; Par. 0024-0025; the first data packet P1 is sent via the first logical channel and is received correctly by the MS 110, which transmits an acknowledgement A1 304 on an uplink channel 124.).

As to claim 10, Baker shows that the communication station sends a NACK packet (Figure 3-4, NACK 306) to the another communication station as independent

data through the plurality of channels after the send packet has not been normally received from the another communication station, the NACK packet indicating that the send packet has not been normally received (Figure 3-4; Par. 0025; the second data packet P2 is sent via the second logical channel. However, this packet is not received correctly by the MS 110, which issues a negative acknowledgement (N2) 306. Hence, when channel 2 is next scheduled for transmission, packet P2 is transmitted again. This time it is correctly received, and an acknowledgement 304 is issued on the uplink channel 124, thereby freeing channel 2 to transmit further packets 302.).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 11-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bender et al. (US 2004/0190471 A1; hereinafter Bender) in view of Baker et al. (US 2002/0119778 A1; hereinafter Baker).

As to claim 11, Bender shows a radio communication system (fig. 1) comprising: a base station (104) and a terminal station (102) provided as one and another

communication stations, wherein the one communication station is constructed to send a beacon (Par. 0043; pilot preamble 202) in through a channel to the another communication station as independent data through the channel, the beacon corresponding to the channel, the another communication station is constructed to send registration packet (Par. 0043; traffic channel request 204; Par. 0021; traffic channel request 204 includes an mobile station identifier MSI) and authentication packet through the channel (Par. 0043; 204; Par. 0021; 204 also includes data that identifies the signal's characteristics.) to the one communication station as independent data through after the beacon has been received from the one communication station, and the one communication station is constructed to send packet indicating whether a registration is correct or not and each of packet indicating whether an authentication is correct or not in the channel to the another communication station as independent data, each packet corresponding to the channel, after the registration packet and the authentication packet is received from the another communication station (Par. 0021; after sending 204, the mobile station can begin using the channel and transmit data to the base station.). However, Bender does not show a plurality of channels where plurality of beacons, registration, authentication packets are sent and each of the plurality of channels being defined by a different frequency.

Baker shows a plurality of channels, each of the plurality of channels being defined by a different frequency (Figures 3-4; shows that packets 302 are sent in parallel along logical channels 1-4; Par. 0029; the logical channels are time-multiplexed so as to appear effectively as a single data stream at the MS 110; other methods of

transmitting in parallel may be used as alternatives (or in combination with time-multiplexing or with each other), including for example frequency-, code- and space-multiplexed). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Bender to utilize the plurality of channels as shown by Baker by transmitting beacons, registration, authentication packets through these channels above in order to have redundancy and a reliable communication path for transmissions.

As to claim 12, further modified Bender shows that the one communication station is constructed to send the plurality of beacons to the another communication station synchronously, wherein the another communication station is constructed to send the plurality of registration packets and the plurality of authentication packets to the one communication station synchronously, and wherein the one communication station is constructed to send to the another communication station synchronously the plurality of packets indicating whether the registration is correct or not and the plurality of packets indicating whether the authentication is correct or not (Baker: Par. 0029; the logical channels are time-multiplexed so as to appear effectively as a single data stream at the MS 110; other methods of transmitting in parallel may be used as alternatives (or in combination with time-multiplexing or with each other), including for example frequency-, code- and space-multiplexed; Examiner notes that since the system of Baker is time-multiplexed and frequency multiplexed, packets sent along the logical (parallel) channels, are sent synchronously.).

As to claim 13, this claim is rejected using the same reasoning set forth in the rejection of claim 11.

As to claim 14, Bender shows a communication station for operating as a terminal station, wherein the communication station is constructed to send registration packets authentication packets, after a beacon is received from the another communication station (abstract; Par. 0021, 0043). However, Bender does not show parallel channels, and each of the plurality of channels being defined by a different frequency.

Baker shows a plurality of channels, each of the plurality of channels being defined by a different frequency (Figures 3-4; shows that packets 302 are sent in parallel along logical channels 1-4; Par. 0029; the logical channels are time-multiplexed so as to appear effectively as a single data stream at the MS 110; other methods of transmitting in parallel may be used as alternatives (or in combination with time-multiplexing or with each other), including for example frequency-, code- and space-multiplexed). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Bender to utilize the plurality of channels as shown by Baker by transmitting beacons, registration, authentication packets through these channels above in order to have redundancy and a reliable communication path for transmissions.

As to claims 15-16, these claims are rejected for the same reasoning as set forth in the rejection of claims 11-12, respectively.

As to claim 17, modified Bender shows wherein the one communication station is constructed to store in each of the plurality of beacons a communication station identifier of the one communication station individually designated every communication station, and send each of the plurality of beacons, in which the communication station identifiers of the one communication station is stored, to the another communication station (Bender: Par. 0048), and wherein the another communication station is constructed to recognize that the communication station identifier of the one communication station stored in each of a plurality of beacons received from the one communication station is common to the plurality of channels, and sends each of the plurality of registration packets and the plurality of authentication packets to the one communication station (Bender: Par. 0048, 0033).

As to claim 18, modified Bender shows that the another communication station is constructed to store in each of the plurality of registration packets and the plurality of authentication packets, a communication station identifier individually designated every communication station, and sends each of the plurality of registration packets and the plurality of authentication packets, in which the communication station identifiers are stored, to the one communication station (Bender: Par. 0033, 0043, 0045; mobile station identifier - MSI), and wherein the one communication station is constructed to recognize that the communication station identifier stored in each of a plurality of registration packets and a plurality of authentication packets received from the another communication is common to the plurality of channels (Baker: Figure 3-4), and send each of the plurality of packets indicating whether the registration is correct or not, and

the plurality of packets, of which the authentication is correct or not, to the another communication station (Bender: Par. 0021, 0033, 0043, 0045; mobile station identifier - MSI).

As to claims 19 and 22, these claims are rejected for the same reasoning as set forth in the rejection of claim 15.

As to claim 20, this claim is rejected for the same reasoning as set forth in the rejection of claim 17.

As to claims 21 and 23, these claims are rejected for the same reasoning as set forth in the rejection of claim 18

As to claim 24, this claim is rejected for the same reasoning as set forth in the rejection of claim 17.

As to claim 25, Bender shows a radio communication system (figure 1) comprising: a base station (104) and a terminal station (102) provided as one and another communication stations, wherein one communication station is constructed to send a single beacon (Par. 0042; 202), which representatively corresponds to a channel, through a single exclusive channel (112) to another communication station, and wherein the another communication station is constructed to send a single registration packet (Par. 0043; 204; Par. 0021; 204 includes an MSI) and a single authentication packet (Par. 0043; 204; Par. 0021; 204 also includes data that identifies the signal's characteristics.), which representatively correspond to the channel, through the single exclusive channel to the one communication station after the single beacon

has been received from the one communication station, and wherein the one communication station is constructed to send a single packet indicating whether a registration is correct or not and a single packet indicating whether an authentication is correct or not, each of such packets representatively corresponding to the channel, through the single exclusive channel to the another communication station, after the single registration packet and the single authentication packet are received from the another communication station (Par. 0021; after sending 204, the mobile station can begin using the channel and transmit data to the base station.). However, Bender does not show a plurality of channels, each of the plurality of channels and each such packets corresponding to each of the plurality of channels

Baker shows a plurality of channels, each of the plurality of channels being defined by a different frequency (Figures 3-4; shows that packets 302 are sent in parallel along logical channels 1-4; Par. 0029; the logical channels are time-multiplexed so as to appear effectively as a single data stream at the MS 110; other methods of transmitting in parallel may be used as alternatives (or in combination with time-multiplexing or with each other), including for example frequency-, code- and space-multiplexed). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Bender to utilize the plurality of channels as shown by Baker by relating the different packets of Bender to each of the plurality of channels in order to have redundancy and a reliable communication path for transmissions.

As to claim 26, modified Bender shows that the one communication station is constructed to store in the single beacon a communication station identifier of the one

communication station individually designated every communication station, and send the single beacon, in which the communication station identifier of the one communication station is stored, to the another communication station (Bender: Par. 0048), and wherein the another communication station is constructed to recognize that the communication station identifier of the one communication station stored in the single beacon received from the one communication station is common to the plurality of channels, and send the single registration packet and the single authentication packet to the one communication station (Bender: Par. 0048, 0033).

As to claim 27, modified Bender shows that the another communication station is constructed to store in a single registration packet and a single authentication packet a communication station identifier of the another communication station individually designated every communication station, and send a single registration packet and a single authentication packet, in which the communication station identifier of the another communication station is stored, to the one communication station (Bender: Par. 0033, 0043, 0045; MSI), and wherein the one communication station is constructed to recognize that the communication station identifier of the another communication station stored in the single registration packet and the single authentication packet is common to the plurality of channels, and send a single packet indicating whether a registration is correct or not and a single packet indicating whether an authentication is correct or not, to the another communication station (Bender: Par. 0021, 0033, 0043, 0045; MSI).

As to claims 28 and 31, the same rejection is used as in claim 25.

As to claim 29, the same rejection is used as in claim 26.

As to claims 30 and 32, the same rejection is used as in claim 27.

As to claim 33, the same rejection is used as in claim 26.

Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baker et al. (US 2002/0119778 A1; hereinafter Baker) in view of Dahlman et al. (US 6907005 B1; hereinafter Dahlman).

As to claim 34, Baker shows that the one communication station includes a channel controller (Figure 1-2, microcontroller 112) that sends as one packet unit each of the plurality of send packets to the another communication station (Figure 3-4). However, Baker does not show a buffer that stores the plurality of send packets.

Dahlman shows a buffer (Figure 6, buffer 3-4, 8). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Baker to include the features of Dahlman in order to have a temporary space for packets.

Response to Arguments

Applicant's arguments, see Applicant's Arguments/Remarks pages 18-21, filed November 6, 2007, with respect to the rejection(s) of claim(s) 1, 2, and 8 under 35 U.S.C. 102(b) as being anticipated by Kanerva et al. (US 6,052,385); rejection(s) of claim(s) 3-7, 9-10 under 35 U.S.C. 103(a) as being anticipated by Kanerva et al. (US

6,052,385) in view of Dahlman et al. (US 6,907,005 B1); rejection(s) of claim(s) 11-33 under 35 U.S.C. 103(a) as being anticipated by Bender et al. (US 2004/0190471) in view of Kanerva et al. (US 6,052,385) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of:

- Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Baker et al. (US 2002/0119778 A1).
- Claims 11-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bender et al. (US 2004/0190471 A1) in view of Baker et al. (US 2002/0119778 A1).
- Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baker et al. (US 2002/0119778 A1) in view of Dahlman et al. (US 6907005 B1).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Redentor M. Pasia whose telephone number is 571-272-9745. The examiner can normally be reached on M-F 7:30am to 4:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris H. To can be reached on (571)272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Redentor Pasia

DORIS H. TO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600